## ABSTRACT OF THE DISCLOSURE

An apparatus is disclosed for predicting bone fracture risk in an osteoporotic patient. The apparatus comprises a Dual X-ray Absorptiometry scanner for scanning a body area of the patient and producing a Dual X-ray Absorptiometry image of the body area, and image analysis means for analyzing pre-determined aspects of the Dual X-ray Absorptiometry image. The apparatus further comprises data comparison means comprising a database of comparative data sets from Dual X-ray Absorptiometry images of control subjects to predict the risk of bone fracture in the patient. The image analysis means preferably analyses the shape of a body past using an Achive Shape Model or analyses the texture of a body past using Fourier Transforms and Principal Component Analysis.